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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,696	03/11/2004	Thomas S. Afferton	Afferton 2003-0075	6182

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EXAMINER	
ABDIN, SHAHEDA A	
ART UNIT	PAPER NUMBER
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,696	AFFERTON ET AL.	
	Examiner	Art Unit	
	Shaheda A. Abdin	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 21-25 are objected to because of the following informalities: in claim 21, line 6, "ODS " should be "Optical Director Side (ODS)". In line 12, "a CS" should be "a Customer Side (CS)" Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1 - 25 are rejected under 35 U.S.C. 102(e) as being anticipated Way et al. (US Pub NO.: 20060275034 A9).

(1) Regarding claim 1:

A network arrangement (10, Fig. 1a) comprising nodes and optical links (14,16) interconnecting the nodes (network nodes 18), characterized in that at least one node (26) comprises.

a transceiver pool (transponder, 20) , that includes at least one transceiver, at least one customer-side CS (client side service, 24) connection point , and at least one optical director-side ODS (line side transmitter, 22) connection point where the transceiver pool is adapted to couple said at least one CS connection point to said at least one ODS connection point so that information contained in a signal of a particular wavelength at said ODS connection point is substantially the same as information contained in said coupled CS connection point, where said particular wavelength is specified by a control signal ([0047], lines 2-10, and fig. 1a).

an optical director element (coupler pair, 36) adapted to communicate information via essentially all-optical paths (fiber16), said director having a number of ports (first and second input ports, 46 and 48 and first output port 50, here input port is greater then the output port) at least one greater than the number of said ODS connection points, and having said ODS connection points connected to a corresponding number of said ports (first output port 50, coupled to a line-side) where the optical director is controllable to send any part of a signal applied to any one of its ports to any other of its ports ([0048], and fig. 1a, also [0051]).

(2) Regarding claim 2:

Where each of said links interconnects a pair of nodes (140, and 142) and comprise a series connection of at least one optical cable (112 and 114) that contains at least one optical fiber([0052], and fig. 2A).

(3) Regarding claim 3:

Where said optical director forms a communication channel between one or more of said ODS connection points (coupler, 36) and output ports (40 and 42) of said optical director that are not connected to said ODS connection points ([0048], lines 1-4, fig. 1a).

(4) Regarding claim 4:

Where the number of said CS connection points is equal to number of said ODS connection points (it is inherent to have CS connection points equal to ODS connection points because of the transponder, at the same time one side is connected to customer side and the other side is connected to the director side)

(5) Regarding claim 5:

Where each transceiver (transponder, 20) in said transceiver pool is adapted to deliver to said CS connection points an optical signal (from fig. 1a we can see client side receiver receives optical signal from "OEO" section) that is suitable for long-reach optical transmission (fig. 1a).

(6) Regarding claim 6:

Where each transceiver (transponder, 228) in said transceiver pool is connected to one of said CS connection points (client side receiver 232), and to one of said ODS connection points (line side transmitter, 230) ([0055], lines 1-4, and fig. 3A)

(7) Regarding claim 7:

Further comprising a service layer device (WDM transponder, 528, fig. 6a) that is coupled to the CS connection points([0072], lines, 5-10, fig. 6a).

(8) Regarding claim 8:

Where said transceiver pool (transponder, 528) is part of a service layer device ([0072], lines, 5-10, fig. 6a).

(9) Regarding claim 9:

Where said service layer device (WDM transponder, 528) performs a routing, or a multiplexing function ([0072], lines, 5-10, fig. 6a).

(10) Regarding claim 10:

Where a transceiver element in said pool is adapted to transfer information contained in a signal at a CS connection point to a signal of a particular wavelength at an ODS connection point ([0073], lines 4-8, and fig. 6a).

(11) Regarding claim 11:

Where the signal at its associated CS connection point is electrical (at the input of fibers 812 and 814, in line amplifiers, which is customer side connection point it is refer to an electrical signal) ([0081], lines 1-8, and fig. 9a).

(12) Regarding claim 12:

Where the signal at its associated CS connection point is optical ([0080], lines 6-11, fig. 9c).

(13) Regarding claim 13:

Where a transceiver element (20) in said pool is adapted to transfer information to a CS connection point (28) that is contained in a signal of a particular wavelength appearing at one of said at least one OD connection point (26) (line side receiver 26, include a tunable optical wavelength filter 30, see fig. 1a; therefore, transfer information may have particular wavelength, because In particular, tunable wavelength filters with a narrow bandwidth and a

wide tuning range are useful devices for retrieving the desired information with a specific wavelength among the propagating WDM signals) ([0047], fig. 1A).

(14) Regarding claim 14:

Where the signal at the CS connection point is electrical (at the input of fibers 812 and 814, in line amplifiers, which is customer side connection point it is refer to an electrical signal) ([0081], lines 1-8, and fig. 9a).

(15) Regarding claim 15:

Where said optical director comprises a switch (470, in fig. 5A) connected to said ODS (436) connection points; and an optical director (434) connected to said switch and to those ports of said optical director that are not connected to said transceiver pool ([0069], lines 9-14, and fig. 5A).

(16) Regarding claim 16:

Further comprising a management network (610), for communicating said control signals (central hub, network 610, [0076], and fig. 7A)).

(17) Regarding claim 17:

Where the management network is distinct from said network ([0076], fig7a, 7b, it is distinct because central location has electronic termination which break ring 610, 7(a) and 7(b) is configured such a way that transmitter in the central hub is connected to a 1x 2 switch rather than a 1x2 coupler, and the receiver in each node is connected to a 1x2 coupler rather than a 1x2 switch) ([0077], fig. 7A and 7B).

(18) Regarding claim 18 and 19:

Further including in-band control signals and out – band control signal, as recited in claim 19, that flow (clock wise 612 and counter clock wise 614) through said network to provision nodes of said network. (switch 616 can be located at every node so that the receiver receives either fiber 612 or 614. In the event of a break in a fiber, a WDM transponder senses the loss of optical power or a high bit-error-rate, and sends a control signal ,exchange of signaling information could be within the same channel or different signal channel which is referring to in-band control signal and out-band control signal channel to trigger the local optical switch 616 to switch to a different port, as shown in [0076] and [0080], and FIG. 7B).

(20) Regarding claim 20:

Where said transceiver (328) pool is embedded in said optical director (330) ([0062], [0047] and fig. 4B).

(21) Regarding claim 21:

A method for provisioning capacity in a network (10) where nodes are interconnected with optical links (fiber 14,16) comprising the steps of:
at a first node (for first coupler 36) of said nodes receiving control signals (λ 1) responsive to said control signals, tuning a first transceiver pool to deliver an information-bearing signal at one of N ODS connection points (line side 22) associated with said first transceiver pool (local ports), where N is a non-zero integer, and to accept an information-bearing signal from said corresponding ODS connection point, where said information-bearing signal that is delivered by said first transceiver pool is at a wavelength specified by said control signals,

and information in said information-bearing signal delivered by said transceiver pool is substantially the same as information provided to said transceiver pool from a CS connection point (client side 24, [0047], fig. 1A);

responsive to said control signals, directing a first optical director (couple 32 & 34) having at least N+2 ports (first add & drop coupler pair has 3 ports). with N(output ports 40,42) ports associated with said N ODS connection points associated with said first transceiver pool, and remaining ports being coupled to selected ones of said optical links (long-reach ports), to route signals arriving at said N ODS connection points to specific ports of said first optical director ([0047], lines 10-18, fig. 1A).

(22) Regarding claim 22:

Where said signal delivered by said transceiver pool is adapted for long-reach transmission (transmission throw fiber 16 and a polarity of network nodes 18 considered as long reach transmission).

(23) Regarding claim 23:

The method of claim 21 where said directing of routing to specific ports of said optical director is limited to routing to said long-reach ports ([0048], fig. 1a and 1. b).

(24) Regarding claim 24:

Where said control signals also cause said optical director to deliver signals (λ 1) arriving at said long-reach ports to said transceiver pool ([0047] (1. b).

(25) Regarding claim 25:

Further comprising the steps of:

at another node (at 2nd coupler 38) of said network,

receiving control signals (λ 2);

responsive to said control signals, directing a second optical director (38, 2nd coupler) that has M ODS connection points (26) and at least 2 ports (1st and 2nd port), where M is a non-zero integer to route signals arriving at one of said ports to one of said M ODS connection points, as specified by said control signals ([0048], lines 1-10, and fig. 1a);

responsive to said control signals, tuning a second transceiver pool to accept an information-bearing signal at one of said M ODS connection points for delivery to one of a plurality of CS connection points associated with said second transceiver pool ([0048], 1-5, and fig. 1a).

4. Claims 26 – 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Lichtman et al. (US Patent NO.: 7,072,585 B1).

(26) Regarding claim 26:

A method for controlling a network (40) that includes nodes (plurality of access nodes 56), and links that interconnect the nodes, where a first node (assumed first node is connected to east link 82, see fig. 3) of the nodes executes a process comprising the steps of:

provisioning a tunable transceiver (86) of said first node to communicate substantially all of the information of an applied customer signal to a first local connection point that is coupled to a first controllable optical director (76) of said

first node, which information is modulated onto a wavelength ($\lambda 1$) specified by a control signal (98) applied to said tunable transceiver (86),

provisioning said first controllable optical director (coupler switch, 80) to transfer signals at said first local connection point that have said specified wavelength to a port of said first controllable optical director that is specified by a control signal applied to said first optical director, said transfer being via essentially all-optical communication paths within said first controllable optical director (column 8, line 8, column 5, lines 22 – 40, fig. 2 and fig. 3).

(27) Regarding claim 27:

Where the communication paths of the optical director are all-optical (column 8, lines 33-44, and fig. 3).

(28) Regarding claim 28:

Where the port selected for said controllable optical director (76) is connected to a link (84) that is coupled to a port of a second node (assumed second node is connected to west link 82, see fig. 3) of said nodes, where said second node executes a process comprising the steps of:

provisioning a second controllable optical director (coupler switch) to transfer signals that appear at said port of said second node and have said wavelength to a local connection point of said second node, said transfer being effected via essentially all-optical paths in said second controllable director (column 5, lines 22 – 40, fig. 2 and fig. 3),

provisioning a tunable transceiver of said second node to form an output signal from a signal that appears at said local connection point of said second node and at said wavelength (column 5, lines 22 – 40, fig. 3).

(29) Regarding claim 29:

Where the second controllable optical director transfers signals via an all-optical path (column 8, lines 33-44, and fig. 3).

(30) Regarding claim 29:

Where the control signals are applied to said first node in response to a request for provisioning (column 8, lines 49 – 55 fig. 2 and fig. 3).

(31) Regarding claim 31:

Where the request is initiated by an element of the node (since the received signal in received from both direction, therefore, request will be initiated by the element of the node (column 8, line 45 - 50).

(32) Regarding claim 32:

Where the request is initiated by a customer (first communication node, column 6, lines 10 - 15).

(33) Regarding claim 33: where the request arrives from another node (second communication node, column 6, lines 10 - 15).

(34) Regarding claim 34:

Where the request arrives from an administrator that has direct control over provisioning of the node (column 8, line 55, and fig. 2).

(35) Regarding claim 35:

Where the request arrives from an entity (switch fabric 44) that has management Control Over the network (column 8, line 55, and fig. 2).

(36) Regarding claim 36:

Where the request arrives from said entity pursuant to a process that rearranges provisioning in said network (column 8, lines 55 – 63, and fig 2).

(37) Regarding claim 37:

Where the rearranging of provisioning is in response to a request by a customer to provide a modified capacity allocation (column 9, lines 11 - 16).

(38) Regarding claim 38:

Where the rearranging of provisioning is in response to changes in network load conditions (column 5, lines 1-16, column 9, lines 11 – 16, and column).

(39) Regarding claim 39:

The method of claim 38 where the changes in network load conditions arise from network faults (column 3, lines 20 – 30, and column 9, lines 11 – 16).

(40) Regarding claim 40:

Where the control signals are applied in response to a fault condition detected in the network (column 3, lines 20 – 30, and column 9, lines 11 – 16).

(41) Regarding claim 41:

A method for controlling a network (70, in fig. 3) that includes nodes, and links that interconnect the nodes, where a node of said nodes, which comprises a traffic element that includes a tunable transceiver (86) that is coupled to at least

one local port of a controllable optical director (first coupler, 76) that includes at least two non-local ports, executes a process comprising the steps of:

provisioning said controllable optical director to transfer signals of wavelength X (λ1) that arrive at a first of said non-local ports (78) , to local port A of said local ports (column 9, lines 40 – 60, fig. 2, and 3),

provisioning said controllable optical director to transfer signals of wavelength Y(λn) from local port B of said local ports to a second of said non-local ports (column 9, lines 40 – 60, fig. 2, fig3),

provisioning said tunable transceiver to regenerate information contained in signals of wavelength X that arrive at said local port A (column 9, lines 40 – 60, fig. 2 and 3);

provisioning said tunable transceiver to develop signals at said local port B that have wavelength Y and carry substantially the regenerated information (column 9, lines 40 – 60, fig. 2 and 3).

(42) Regarding claim 42:

Where wavelength X and wavelength Y are one and the same wavelength (column 9, lines 45-50).

(43) Regarding claim 43:

Where wavelength X and wavelength Y are different from each other (different data signals having the same wavelength can not arrive at the controlling station).

(44) Regarding claim 44:

Where said local port A and said local port B are one and the same local port (column 9, lines 45-50, fig. 2 and 3).

(45) Regarding claim 45:

Where said local port A and said local port B are different from each other (column 9, lines 45 - 50, fig. 2 and 3).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Guild et al. (Pub. No.: US 2003/0152072 A1) provides an optical routing device for wavelength division multiplexed (WDM) optical signals includes an optical input stage, an optical output stage, and an optical routing stage for coupling optical signals to the optical output stage, wherein the optical routing stage includes a first optical switch array and a second optical switch array, the first optical switch array being adapted to selectively couple optical signals to the second optical switch array on the basis of the wavelength of the respective optical signal and a tunable transponder unit. The transponder unit provides a wavelength translation function for any optical signal received by the transponder unit. This feature enables efficient sharing of transponders.

6. Any inquiry concerning this communication should be directed to the examiner at (571) 270-1673 Monday- Friday 7:30 AM to 5:00 PM EST.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu, can be reached at (557) 272-3036.

Information regarding the status on an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9799 (IN USA OR CANADA) or 571-272-1000.

any response to this action should be mailed to:

Commissioner of patents and trademarks

Washington, D.C. 20231

Or fax to:

(703)872-9314 (for Technology Center 2600 only)

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February 19, 2007

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